

What is claimed is:

1. A method for transmitting a data packet, characterised by the steps of:
 - extracting from each of at least two first data packets (1,1_i,1_j,1_k) an original first destination address (31) and a first body part (4,4_i,4_j,4_k) containing data to be transmitted by the first data packet (1,1_i,1_j,1_k), the extracting step including:
 - determining a first header part (2,2_i,2_j,2_k) of each first data packet (1,1_i,1_j,1_k), said first header part (2,2_i,2_j,2_k) containing data packet specific information including an original first destination address (31),
 - determining from each of said first header parts (2,2_i,2_j,2_k) the original first destination address (31) of the first data packet (1,1_i,1_j,1_k),
 - storing the original first destination address (31) of the corresponding first data packet (1,1_i,1_j,1_k) in second storing means (572),
 - discarding the first header parts (2,2_i,2_j,2_k),
 - storing in first storing means (571) a remaining part of each of the first data packets, as a first body part (4,4_i,4_j,4_k),
 - making a concatenated or second data packet (1'), the concatenated or second data packet (1') including:
 - a second header part (2') containing second data packet specific information including a second destination address (31') for the concatenated or second data packet,
 - a second body part (4',41-47) including: a data part (45-47) including the first body parts (4,4_i,4_j,4_k) of said first data packets (1,1_i,1_j,1_k) and a content information part (41-44) including information determining the position of each of the first body parts (4,4_i,4_j,4_k) in the data part, the number of first body parts (4,4_i,4_j,4_k) contained in the concatenated or second data packet (1') and said original first destination addresses (31) of the first body parts (4, 4_i,4_j,4_k),
 - transmitting the concatenated or second data packet (1') to said second destination address (31').
2. A method as claimed in claim 1, wherein before transmitting the concatenated or second data packet (1'), a check data packet is transmitted to the second destination address, for determining a type of the second destination address

(31') based on a return check data packet transmitted by the second destination address (31') in response to the check data packet.

3. A method as claimed in claim 1, wherein the first data packets (1,1_i,1_j,1_k) are first datagrams and the concatenated or second data packet 1' is a second datagram.

4. A method as claimed in claim 3, wherein the first datagrams and second datagram are IP-datagrams.

5. A method as claimed in claim 1, wherein the first body parts (4') are coded with a coding algorithm before the concatenated or second data packet (1') is made and information about the coding algorithm is included in the content information part (41-44).

6. A method as claimed in claim 1, wherein the method is performed at a router device (70-72) of a Wide Area Network (α, β, γ).

7. A method as claimed in claim 6, wherein the method is performed in a connectionless Wide Area Network (α, β, γ).

8. A method for receiving data packets transmitted by a transmitting method as claimed in claim 1, characterised by the steps of:

- receiving a concatenated or second data packet (1'),
- extracting each of said first body parts (4,4_i,4_j,4_k) contained in the concatenated or second data packet (1') from the concatenated or second data packet (1'), the extracting step including:
 - determining a second header part (2') containing second data packet specific information, and
 - a second body part (4') including: a content information part (41-44) including information for determining the position of each of the first body parts (4, 4_i,4_j,4_k) in a data part (45-47) and information for determining a number of first body parts (4, 4_i,4_j,4_k) contained in the concatenated or second data packet (1'), and the content information part (41-44) further containing information about the original first destination addresses (31) of the first body parts (4, 4_i,4_j,4_k), and a data part (45-47) including the first body parts (4, 4_i,4_j,4_k),
- storing at least one first body part (4, 4_i,4_j,4_k) and the corresponding original first destination address (31) in storing means (664),

- reconstructing at least one first data packet (1, 1_i, 1_j, 1_k), including a first header part (2, 2_i, 2_j, 2_k) containing packet specific information and the original first destination address (31), and the first body part (4, 4_i, 4_j, 4_k).
 - transmitting the at least one first data packet (1, 1_i, 1_j, 1_k) to the corresponding original first destination address (31).
9. A method as claimed in claim 7, wherein the concatenated or second data packet (1') is a second datagram and the first data packet (1, 1_i, 1_j, 1_k) is a first datagram.
10. A method as claimed in claim 8, wherein the first and second datagrams are IP-datagrams.
11. A method as claimed in claim 7, wherein after extracting one or more first data packets (1, 1_i, 1_j, 1_k), a remainder of the concatenated or second data packet is transmitted (1') to a third destination address.
12. A method as claimed in claim 7, wherein a number of the first data packets (1, 1_i, 1_j, 1_k) contained in the second body part (4') are extracted, at least one of the first data packets (1, 1_i, 1_j, 1_k) is transmitted to an original first destination address (31) and at least one remaining data packet and at least one new first data packet are concatenated and are transmitted to the third destination address.
13. A method as claimed in claim 1, wherein the method is performed at a router device (70-72) of a Wide Area Network (α , β , γ).
14. A data packet transmitter device having:
- at least one input port (51), for receiving first data packets,
 - extracting means (56) connected to the input port, for extracting from each of at least two first data packets an original first destination address (31) and a first body part (4, 4_i, 4_j, 4_k) containing data to be transmitted by the first data packet (1, 1_i, 1_j, 1_k), the extracting means including:
 - first determining means (561) for determining a first header part (2, 2_i, 2_j, 2_k) of each first data packet (1, 1_i, 1_j, 1_k), the first header part (2, 2_i, 2_j, 2_k) containing data packet specific information including an original first destination address (31),
 - second determining means (562) for determining from each of said first header parts (2, 2_i, 2_j, 2_k) the original first destination address of each of the first data packets (1, 1_i, 1_j, 1_k),

- first storing means (563) for storing the original first destination addresses (31),
 - dropping means (565) for discarding the first header parts (2, 2_i, 2_j, 2_k),
 - second storing means (564) for storing first body parts (4, 4_i, 4_j, 4_k) of the first data packets (1, 1_i, 1_j, 1_k).
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- packet preparation means (57) connected to said extracting means (56) for making a concatenated or second data packet (1'), including:
 - second header part preparation means (571) for preparing a second header part (2') containing second data packet specific information including a second destination address (31'),
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- second body part preparation means (572) for preparing a second body part (4', 41-47) including: a content information part (41-44) including information for determining a position of first body parts (4, 4_i, 4_j, 4_k) in a data part (45-47) of the second body part, the number of first body parts (4, 4_i, 4_j, 4_k) contained in the concatenated or second data packet (1') and original first destination addresses (31) of said first body parts (4, 4_i, 4_j, 4_k), and said data part (45-47) including said first body parts (4, 4_i, 4_j, 4_k),
 - at least one output port (52-54) connected to said packet preparation means (57) for transmitting the concatenated or second data packet (1') to the second destination address (31').
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15. A router device, having a transmitter device (5) as claimed in claim 14 and the router device further including routing means (55) connected to the transmitter device (5) between the at least one input port (51) and at least one of the at least one output ports (52-54) for routing data packets (1, 1') to one of the at least one output ports (52-54).
16. A router device as claimed in claim 15 wherein the router device (70-72) is a TCP/IP router device (70-72).
17. A data packet receiver device (6), including
- an input port (61-63) for receiving data packets,
 - extracting means (66) for extracting first body parts (4, 4_i, 4_j, 4_k) and original first destination addresses (31) from a concatenated or second data packet (1'), the extracting means (66) including:

- first determining means (661) for determining a second header part (2') containing second data packet (1') specific information, and a second body part (4'),
 - second determining means (662) for determining a position of each of the first body parts (4, 4_i, 4_j, 4_k) in a second data part (45-47) of the second body part (4', 41-47) based on information in a content information part (41-44) of the second body part (4', 41-47),
 - third determining means (663) for determining from the content information part (41-44) an original first destination address (31) of each of the first body parts (4, 4_i, 4_j, 4_k),
 - storage means (664) for storing at least one first body part (4, 4_i, 4_j, 4_k) and the corresponding original first destination address (31),
 - first packet preparation means (67) for reconstructing at least one extracted first data packet, including a first body part (4, 4_i, 4_j, 4_k) and a first header part (2, 2_i, 2_j, 2_k), the first header part containing extracted first packet specific information and the original first destination address (31),
 - an output port (64) for transmitting the first data packet (1, 1_i, 1_j, 1_k) to the original first destination address (31).
19. A router device having a receiver device (6) according to claim 17 and
- 20 further including routing means (65) connected to the receiver device (6) between the at least one input port (61-63) and at least one output port (64) for routing data packets to one of the at least one output ports (64).
21. A router device as claimed in claim 18, further including type determination means for determining a type of an incoming data packet, and switching means for
- 25 switching off or bypassing the extracting means (66) and first packet preparation means (67) if the type of the incoming data packet is not a concatenated or second data packet (1').
20. A router device as claimed in claim 18, wherein the router device is a TCP/IP router device (70-72).
- 30 21. A Wide Area Network (α , β , γ), including at least two network devices (70-72; 90-103) connected to each other via a network connection, wherein at least one of the devices (70-72; 90-103) includes a data packet transmitter device (5) according to claim 14 and at least one of the devices includes a data packet receiver device (6),

said data packet receiver device having:

- an input port (61-63) for receiving data packets,
- extracting means (66) for extracting first body parts (4, 4_i, 4_j, 4_k) and original first destination addresses (31) from a concatenated or second data packet (1'), the extracting means (66) including:
 - first determining means (661) for determining a second header part (2') containing second data packet (1') specific information, and a second body part (4'),
 - second determining means (662) for determining a position of each of the first body parts (4, 4_i, 4_j, 4_k) in a second data part (45-47) of the second body part (4', 41-47) based on information in a content information part (41-44) of the second body part (4', 41-47),
 - third determining means (663) for determining from the content information part (41-44) an original first destination address (31) of each of the first body parts (4, 4_i, 4_j, 4_k),
 - storage means (664) for storing at least one first body part (4, 4_i, 4_j, 4_k) and the corresponding original first destination address (31),
 - first packet preparation means (67) for reconstructing at least one extracted first data packet, including a first body part (4, 4_i, 4_j, 4_k) and a first header part (2, 2_i, 2_j, 2_k), the first header part containing extracted first packet specific information and the original first destination address (31), and
- an output port (64) for transmitting the first data packet (1, 1_i, 1_j, 1_k) to the original first destination address (31).